REMARKS

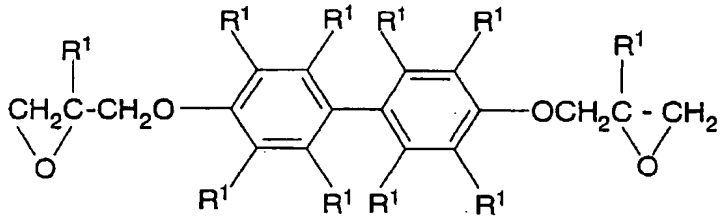
Claims 26-38 and 44-45 are pending in the application. Claims 26-33, 38, 44 and 45 are withdrawn from consideration.

Claim 34 is amended herewith and is believed to address the 35 USC §112, second paragraph rejection noted in the Official Action.

Claims 34-37 are rejected as unpatentable over TAKAMI et al. 6,054,222 in view of SHIMIZU et al. 5,854,316. This rejection is respectfully traversed.

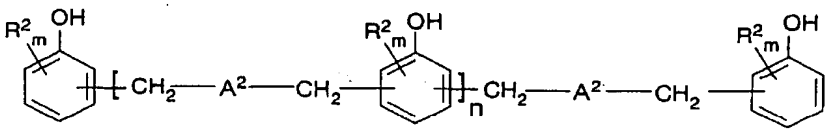
The Official Action notes that TAKAMI et al. teach various epoxy compounds. Specifically, TAKAMI et al. teach an epoxy resin composition that is low in stress intensity, excellent in solder reflow resistance, high in fluidity, and excellent in moldability. However, TAKAMI et al. provide no experimental evidence indicating that the epoxy resin compositions disclosed therein would be good in flame retardance.

TAKAMI et al. teach specifically examples of an epoxy resin composition comprising (A) epoxy resin, (B) curing agent (phenolic resin), (C) cure accelerator and (D) silica (inorganic fillers), wherein (A) epoxy resin is a biphenyl epoxy resin of the formula (1):



(1)

where the $R^1$'s identically or differently denote a hydrogen atom, a monovalent organic group or a halogen atom, (B) curing agent (phenolic resin) is a phenolic resin of general formula (3):

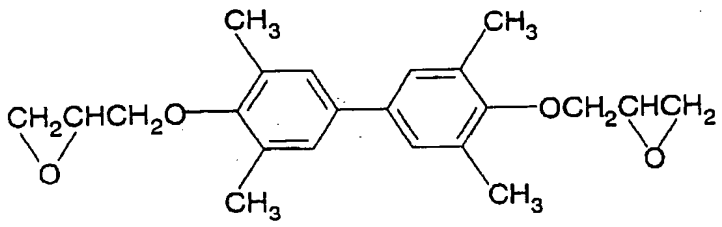


(3)

wherein the $R^2$'s identically or differently denote hydrogen atoms, monovalent organic groups or halogen atoms; $A^2$ is a bivalent group selected from those of benzene, biphenyl, naphthalene; m is 0 to 3; and n is 1 to 50, and (D) silica accounts for more than 85 wt% of the total amount of the epoxy resin composition. In addition, TAKAMI et al. suggest that the ratio of the epoxy equivalent of (A) epoxy resin to the hydroxyl equivalent of (B) phenolic resin should be preferably adjusted within the range of 0.5 to 1.5, more preferably of 0.8 to 1.2.

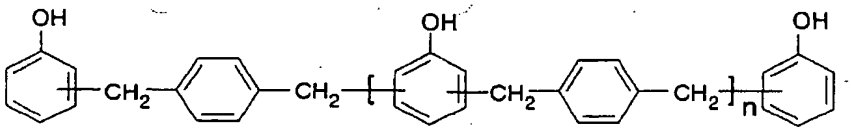
For instance, in the epoxy resin composition of Examples listed in Table 1, epoxy resin I-A of bishydroxybiphenyl type epoxy resin with epoxy equivalent of 193 g/eq. and curing agent I-A of phenol aralkyl resin with hydroxyl equivalent of 170 g/eq. are utilized. The biphenyl epoxy resin I-A (epoxy

equivalent: 193 g/eq.) is understood to have a structure of formula (I) shown in JP 08-253555A, SHIMIZU et al. and JP 10-182941:




(I)

The phenol aralkyl resin I-A (hydroxyl equivalent: 170 g/eq.) is understood to have a structure of formula (II) shown in JP 08-253555 and SHIMIZU et al.:



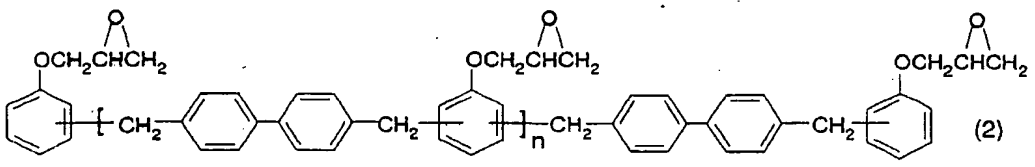

(II)

TAKAMI et al. provide no experimental evidence indicating that examples of epoxy resin compositions listed in Tables would be good in flame retardance.

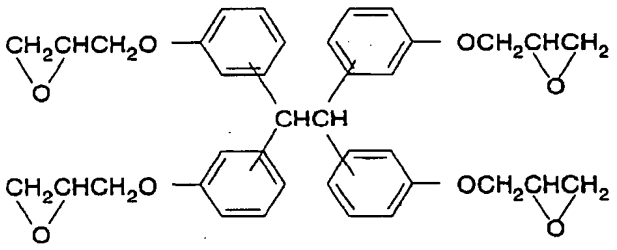
Thus, TAKAMI et al. give no clear suggestion that among examples of phenolic resin described therein, choice of phenolic resin including biphenyl derivatives having no hydroxyl group, such as phenolbiphenylaralkyl resins of formula (10) and (13), is preferred to attain good flame retardancy for an epoxy resin composition comprising inorganic fillers in the content of more than 60 wt% in the total weight of the epoxy resin composition

without the use of any flame retardant or flame retarding auxiliary.

Also, TAKAMI et al. give no clear suggestion that among examples of epoxy resin described therein, choice of such a combinational mixture of a phenolbiphenylaralkyl epoxy resin represented by formula (2):



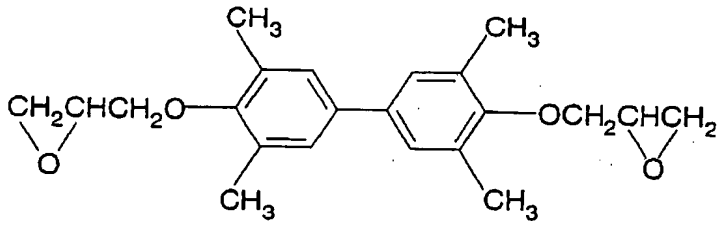

wherein n = 0 to 10, with a tetraphenylolethane type expoxy resin represented by formula (3):



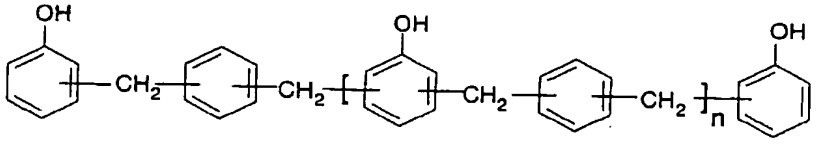

is preferred to attain good flame retardancy for an epoxy resin composition comprising inorganic fillers in the content of more than 60 wt% in the total weight of the epoxy resin composition without the use of any flame retardant or flame retarding auxiliary.

SHIMIZU et al. do not overcome this shortcoming. Specifically, SHIMIZU et al. teach that in order to fulfill the objection of good flame retardance, the content of the inorganic filler (C) in the epoxy resin compound should be 70-97 wt% and the inorganic filler (C) should contain 0.1-50 wt% of alumina (see column 4, lines 8-16).

SHIMIZU et al. suggest that in the case where no alumina is used even though the amount of the inorganic filler (C) is more than 70 wt%, the epoxy resin composition would be poor in flame retardance, as shown by comparative examples (1), (2), (4) or (6) listed in Tables 1 and 2, which comprise epoxy resin II of 4,4'-bis(2,3-epoxypropyl)-3,3',5,5'-tetramethlybiphenyl:



and Hardener II (phenolic resin) of formula (II):



(II)

(where those fractions in which n in 1-3 account for about 90 wt%), without flame retardant or flame retarding auxiliary.

Therefore, SHIMIZU et al. do not teach how to attain good flame retardancy for an epoxy resin composition comprising inorganic fillers in the content or more than 60 wt% in the total weight of the epoxy resin composition, without the use of any flame retardant or flame retarding auxiliary when there is no amount of alumina contained in the inorganic fillers.

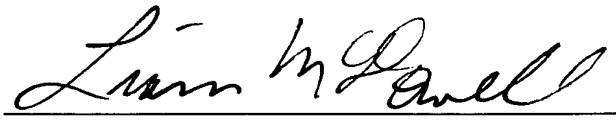
Accordingly, the proposed combination of references does not teach or suggest a flame retardant epoxy resin and thus would not render obvious claims 34-37.

In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. §1.16 or under 37 C.F.R.§1.17.

Respectfully submitted,

YOUNG & THOMPSON



Liam McDowell, Reg. No. 44,231
745 South 23rd Street
Arlington, VA 22202
Telephone (703) 521-2297
Telefax (703) 685-0573

LM/lrs